

## ABSTRACT

A sensor comprises a semiconductor pellet (10) including a working portion (11) adapted to undergo action of a force, a fixed portion (13) fixed on the sensor body, and a flexible portion (13) having flexibility formed therebetween, a working body (20) for transmitting an exerted force to the working portion, and detector means (60-63) for transforming a mechanical deformation produced in the semiconductor pellet to an electric signal to thereby detect a force exerted on the working body as an electric signal. A signal processing circuit is applied to the sensor. This circuit uses analog multipliers (101-109) and analog adders/subtractors (111-113), and has a function to cancel interference produced in different directions. Within the sensor, two portions (E3, E4-E8) located at positions opposite to each other and producing a displacement therebetween by action of a force are determined. By exerting a coulomb force between both the portions, the test of the sensor is carried out. Further, a pedestal (21, 22) is provided around the working body (20). The working body and the pedestal are located with a predetermined gap or spacing therebetween. A displacement of the working body is caused to limitatively fall within a predetermined range corresponding to the spacing. The working body and the

pedestal are provided by cutting a same common substrate  
(350, 350').

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